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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/543,622	04/05/2000	Richard B. Diver JR.	SD-6358	6499

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT PAPER NUMBER

2872

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Please find below and/or attached an Office communication concerning this application or proceeding.

8m

<b>Office Action Summary</b>	<b>Application No.</b> 09/543,622	<b>Applicant(s)</b> DIVER ET AL.	
	<b>Examiner</b> Joshua L. Pritchett	<b>Art Unit</b> 2872	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This action is in response to Request for Continued Examination filed March 15, 2005 and Amendment filed January 26, 2005. Claims 1, 2, 12 and 25 have been amended and claim 26 has been cancelled as requested by the applicant.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 5, 7, 8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Stone (“Status of Glass Reflector Technology for Heliostats and Concentrators”).

Regarding claim 1, Stone disclose a solar collector comprising a glass mirror (GLASS); a front sheet (STEEL); a core (HONEYCOMB) comprising a honeycomb core material; and a back sheet (STEEL); wherein the back of the mirror is affixed to the front sheet, the front sheet is affixed to the core and the core is affixed to the back sheet (Fig. 9).

Regarding claim 2, Stone discloses a sealing strip (EPOXY ADHESIVE) positioned between the glass mirror and the front sheet (Fig. 9).

Regarding claim 4, Stone discloses the glass mirror comprises a silvered backing (Fig. 5).

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Regarding claim 5, Stone discloses the front sheet and the back sheet comprise carbon steel (Fig. 9).

Regarding claim 7, Stone discloses the core material comprises a honeycomb structure (Fig. 9).

Regarding claim 8, Stone discloses the honeycomb core material comprises aluminum (Note from Fig. 9).

Regarding claim 11, Stone discloses the core material comprises a cellulose based material (Fig. 11).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone ("Status of Glass Reflector Technology for Heliostats and Concentrators").

Regarding claim 3, Stone teaches the invention as claimed but lacks reference to a EPDM sealing strip. EPDM is an extremely well known rubber sealant used with mirrors. Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to have the sealing strip of Stone made of EPDM for the purpose of preventing moisture from contacting the interface of the mirror and the front sheet.

Regarding claim 6, Stone teaches the invention as claimed but lacks reference to the gauge of the steel. It is extremely well known in the art to form support structures of steel with a gauge between **approximately** 24 and 28. Emphasis added. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the steel of Stone be a gauge between 24 and 28 for the purpose of providing sufficient support to maintain the form of the mirror structure.

Regarding claim 9, Stone teaches the invention as claimed but lacks reference to the thickness of the aluminum. It is extremely well known in the art to form support structure of aluminum with a thickness between **approximately** 0.015 and 0.004 inches. Emphasis added. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the aluminum of Stone have a thickness between 0.015 and 0.004 inches for the purpose of supporting the weight of the mirror while remaining light enough to be easily transportable.

Claims 10, 12-25 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone ("Status of Glass Reflector Technology for Heliostats and Concentrators") in view of Nicolas (US 4,320,164)

Regarding claim 10, Stone teaches the invention as claimed but lacks reference to the use of a foam material for the core. Nicolas teaches the use of a foam material to foam (77) the core of a solar collector (Fig. 6). It would have been obvious to a person of ordinary skill in the art at

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the time the invention was made to have the core of the Stone invention be a foam material as taught by Nicolas for the purpose of maintaining a curve in the mirror without having to cut and shape the aluminum of Stone.

Regarding claim 12, Stone teaches a solar collector comprising a glass mirror (GLASS); a front sheet (STEEL); a core (HONEYCOMB) comprising a honeycomb core material; and a back sheet (STEEL); wherein the back of the mirror is affixed to the front sheet, the front sheet is affixed to the core and the core is affixed to the back sheet (Fig. 9). Stone lacks reference to the use of a mandrel. Nicolas teaches the use of a mandrel to form a curvature in a mirror (Fig. 6). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Stone invention include the mandrel of Nicolas for the purpose of achieving a repeatable curvature to the mirror surface.

Regarding claim 13, Stone teaches a sealing strip (EPOXY ADHESIVE) positioned between the glass mirror and the front sheet (Fig. 9).

Regarding claims 14 and 24, Stone teaches the invention as claimed but lacks reference to the use of a mandrel. Nicolas teaches the use of a mandrel to form a curvature in a mirror (Fig. 6). Nicolas teaches many small mirrors stacked atop the mandrel. Each of the mirrors can be considered a solar collector, therefore the Nicolas invention teaches simultaneous formation of a plurality of solar collectors. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Stone invention include the mandrel of Nicolas for the purpose of achieving a repeatable curvature to the mirror surface.

Regarding claims 15 and 16, Stone teaches the invention as claimed but lacks reference to the use of a vacuum. It is extremely well known in the art to use a vacuum to remove air from

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between layers of materials used to create optical elements to more securely adhere the layers together. Official Notice is taken. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Stone invention include the use of a vacuum as is known in the art for the purpose of securely adhering the layers of Stone together.

Regarding claim 17, Stone teaches the invention as claimed but lacks reference to a EPDM sealing strip. EPDM is an extremely well known rubber sealant used with mirrors. Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the sealing strip of Stone made of EPDM for the purpose of preventing moisture from contacting the interface of the mirror and the front sheet.

Regarding claims 18 and 27, Stone discloses the glass mirror comprises a silvered backing (Fig. 5).

Regarding claims 19 and 28, Stone discloses the front sheet and the back sheet comprise carbon steel (Fig. 9).

Regarding claims 20 and 29, Stone teaches the invention as claimed but lacks reference to the gauge of the steel. It is extremely well known in the art to form support structures of steel with a gauge between **approximately** 24 and 28. Emphasis added. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the steel of Stone be a gauge between 24 and 28 for the purpose of providing sufficient support to maintain the form of the mirror structure.

Regarding claim 21, Stone discloses the core material comprises a honeycomb structure (Fig. 9).

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Regarding claim 22, Stone discloses the honeycomb core material comprises aluminum (Note from Fig. 9).

Regarding claim 23, Stone teaches the invention as claimed but lacks reference to the thickness of the aluminum. It is extremely well known in the art to form support structure of aluminum with a thickness between **approximately** 0.015 and 0.004 inches. Emphasis added. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the aluminum of Stone have a thickness between 0.015 and 0.004 inches for the purpose of supporting the weight of the mirror while remaining light enough to be easily transportable.

Regarding claim 25, Stone teaches a solar collector comprising a glass mirror (GLASS); a front sheet (STEEL); a core (HONEYCOMB) comprising a honeycomb core material; and a back sheet (STEEL); wherein the back of the mirror is affixed to the front sheet, the front sheet is affixed to the core and the core is affixed to the back sheet (Fig. 9). Stone further teaches once the collector is formed the mirror, front sheet, core and back sheet remain intact as a stacked structure. Stone lacks reference to the use of a mandrel and foam. Nicolas teaches the use of a mandrel to form a curvature in a mirror (Fig. 6). Nicolas further teaches the use of a foam material to foam (77) the core of a solar collector (Fig. 6). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Stone invention include the mandrel and foam of Nicolas for the purpose of achieving a repeatable curvature to the mirror surface and allowing the mirror to take on a curved shape without having to cut and shape the aluminum of Stone.



***Response to Arguments***

Applicant's arguments, see Amendment, filed January 26, 2005, with respect to the rejection(s) of claim(s) 1-29 under Diver have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Stone. Applicant argued and supplied evidence that the inventive entity of the current application is the same as the publishing entity of the Diver reference. The Diver reference was a 35 U.S.C. 102(a) reference and therefore would be disqualified as prior art if the two entities were the same.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *JP*



**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**